(3169) Ostro: A single body or a contact binary asteroid?

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Asteroid (3169) Ostro was observed photometrically in 1986, 1988 [1], and 2005/2006 [2]. An amplitude of light variation up to 1.2 mag and a synodic rotational period of 6.509 hours were determined. Such a large amplitude suggested that the asteroid could be a contact binary. A shape model of this system was proposed [2] to be a Roche binary described by two homogeneous elongated bodies in hydrostatic equilibrium and in circular synchronous motion around each other.

We observed (3169) Ostro in July-August 2007 (1.9-m telescope, SAAO, South Africa), March 2009 (0.4-m telescope, Borowiec, Poland), and July-August 2009 (0.6-m telescope, Pic du Midi, France; 0.75-m telescope, SAAO, South Africa). Using all available lightcurves we proposed two different models of the asteroid (3169) Ostro: a non-convex single body and a non-convex binary system. Comparison of these two models yields an answer to the question that appeared in the title.

References: [1] Wisniewski, W.Z., 1991, Icarus 90, 117–122. [2] Descamps, P., Marchis, F., Michalowski, T., et al, 2007, Icarus 189, 362–369.